

A microscopic image of a neuron, likely a pyramidal neuron, with its cell body (soma) and dendrites stained with a green fluorescent marker. The neuron is centrally located, with its soma appearing as a bright white-yellow spot. Numerous dendrites extend from the soma, branching out in various directions, and are filled with fine, green, thread-like structures representing the cytoskeleton or synaptic terminals. The background is dark, making the green fluorescence stand out. The image is framed by a blue gradient border on the left and right sides.

Bettering the Human Condition

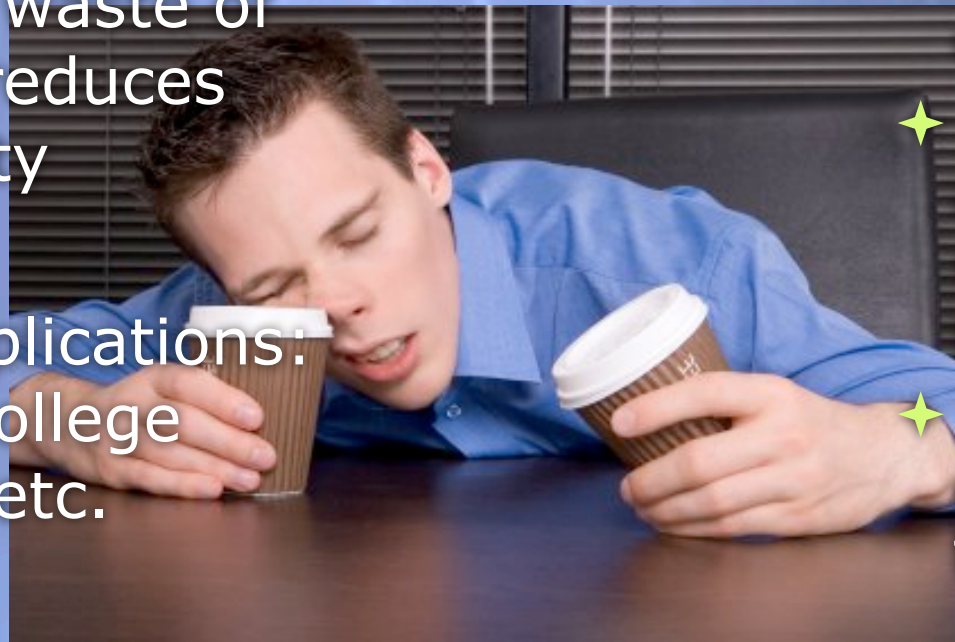
A Neurobiological Approach

Work Like an Ant

★ Problem:

Sleep is a waste of time and reduces productivity

Potential Applications:
military, college students, etc.



★ Solution:

- ★ Control sleep cycles
- ★ Long-term alterations (genetic modifications)
- ★ Continuous chemical treatments

Is it all in your head?

★ Problem:

Anorexia causes a skewed perception of one's self and can lead to physical self-destruction.



★ Solutions:

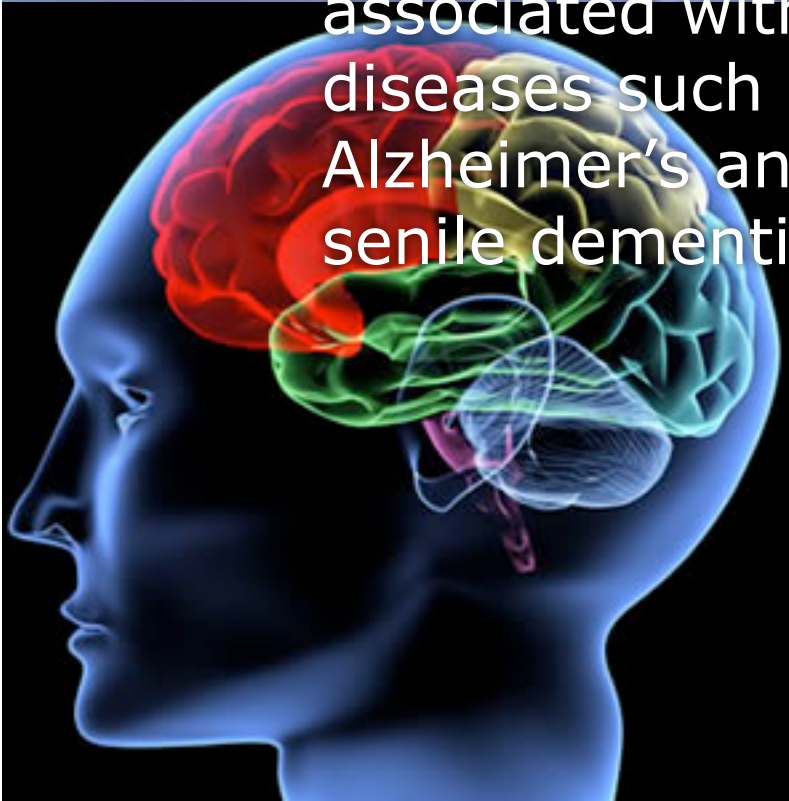
- ★ Alter pathways in the brain
- ★ Seek out potential chemical imbalances (treatments similar to depression)
- ★ Dual approach: social and biological treatments



Forget Me Not

✦ Problem:

Memory loss
associated with
diseases such as
Alzheimer's and
senile dementia.



✦ Solutions:

- ✦ Reduce chemical imbalances (change diet)
- ✦ Target neurotransmitters and their brain pathways (Ach)
- ✦ Genetic screening to prevent/slow the onset of memory loss
- ✦ Target proteins in the brain



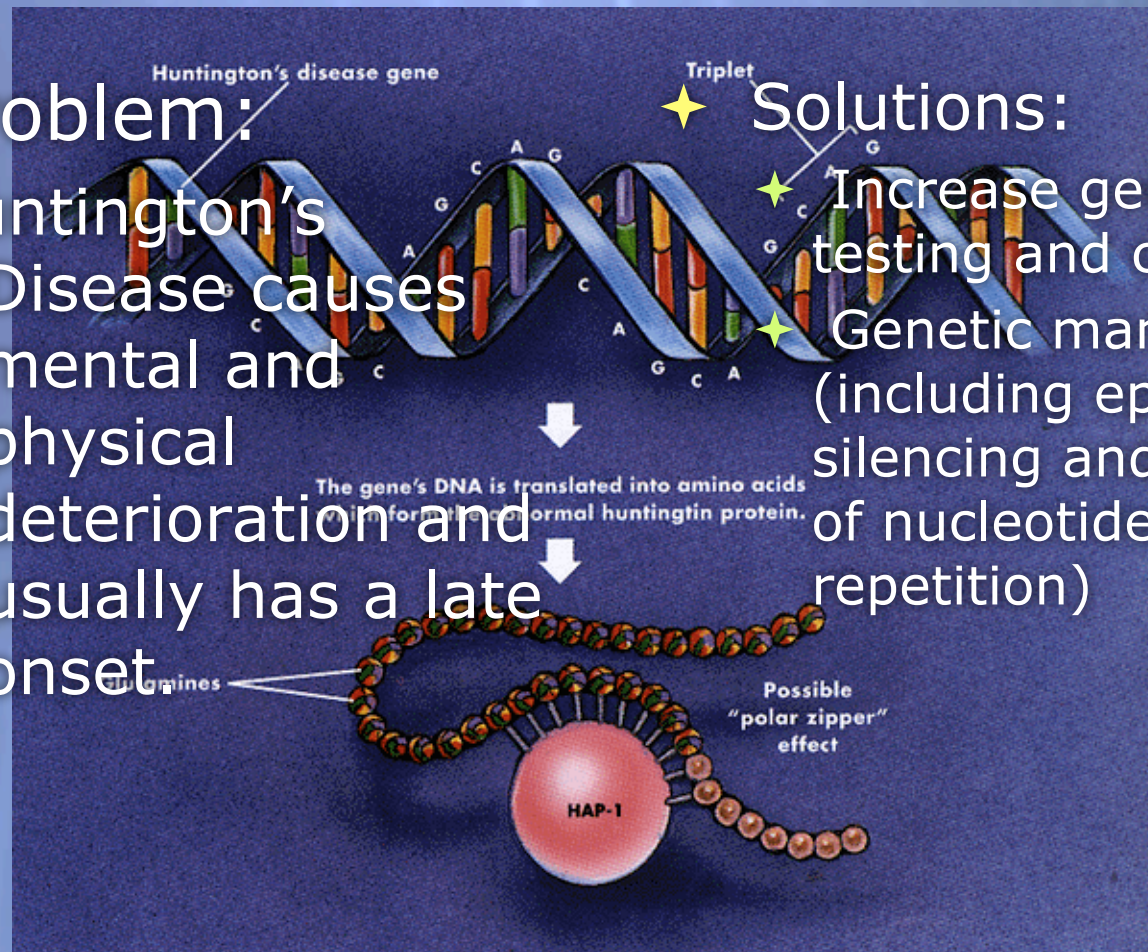
Hunting For a Cure

★ Problem:

Huntington's Disease causes mental and physical deterioration and usually has a late onset.

★ Solutions:

★ Increase genetic testing and counseling
★ Genetic manipulation (including epigenetic silencing and control of nucleotide repetition)



Drug Mail

★ Problem:

How to target and deliver drugs, enzymes, etc to specific, long-lived cells.

★ Solutions:

★ Develop a delivery mechanism with the use of receptor-studded vesicles

